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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,716

06/22/2006

Shinji Ota

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EXAMINER

OMAR, AHMED H

ART UNIT

PAPER NUMBER

2838

NOTIFICATION DATE

DELIVERY MODE

10/08/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
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Office Action Summary	Application No. 10/596,716	Applicant(s) OTA ET AL.	
	Examiner AHMED OMAR	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/22/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The instant application having Application No. 10/596716 filed on 06/22/2006 is presented for examination by the examiner.

Oath/Declaration

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in **37 C.F.R. 1.63**.

Priority

As required by **M.P.E.P. 201.14(c)**, acknowledgement is made of applicant's claim for priority based on application filed on 10/27/2004 (JP 2004-312581)

Drawings

3. The applicant's drawings submitted are acceptable for examination purposes.

Information Disclosure Statement

4. As required by M.P.E.P. 609, the applicant's submissions of the Information Disclosure Statement dated 09/22/2006 is acknowledged by the examiner and the cited references have been considered in the examination of the claims now pending.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 13, 17, 18, 24, 25 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshita (US 2005/0112415) in view of Ehara (US 2002/0142195).

Takeshita et al. discloses a battery pack (See Fig.1, and Par.2 disclose a battery pack) comprising:

a battery (See Fig.1, Item#2 discloses a battery cell) ; a circuit substrate having a charge/discharge safety circuit and arranged on one end face of the battery (See Par.4 discloses a circuit board on which a plurality of components are mounted to form a protection circuit and See Par.63 and Fig.2, Item#4 discloses the circuit board disposed on the outer surface of the frame portion); and an end case in which an external connection terminal is set (See Fig.2, Item#5,42 disclose a cover "end case" and terminals), wherein

the circuit substrate is arranged inside the end case (See Par.63 and Fig.2, Item#4 discloses the circuit board disposed on the outer surface of the frame portion), and the end case is secured to the battery (See. Fig.8, Item#39, 54 and Par.74, disclose a plurality of engaging holes and engaging claws to secure the end case to the battery cell).

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But Takeshita does not disclose the use of screws to screws with a screw head, the screw head extending through and engaging with the end case at both ends and tips of the screws being engaged into the end face at both ends of the battery.

Ehara discloses the use of any locking means such as locking protrusions, bolt and nut, caulking, engagement claws, bonding, etc, to secure the end case to the battery cell (See Par.62).

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the connection claws disclosed by Takeshita with screws or coupling pins to secure the end case to the battery since it is a recognized equivalent.

As per claims 17 and 30, Takeshita et al. in view of Ehara disclose the battery pack according to claim 13, wherein the external connection terminal set in the end case is of the type that establishes or shuts connection between the battery and a device to be connected by a connector on the device side being inserted or removed (See Ehara Fig.2, Items# 45,47 discloses a connection terminal to allow for the insertion of an external device connection to establish connection or break the connection when the device connector is removed)

As per claim 26, Takeshita et al. in view of Ehara disclose the battery pack according to claim 25 as discussed above, wherein the coupling pin includes a protrusion at the tip that has the recess in its peripheral surface; the end face of the battery includes a hole to which the protrusion at the tip of the coupling pin fits and with the protrusion being fitted in the hole, the tip of the coupling pin and the end face of the battery are joined together by resistance welding. (See Ehara

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Par.62, discloses use of any locking means such as locking protrusions, bolt and nut, caulking, engagement claws, bonding, etc, to secure the end case to the battery cell).

7. **Claims 14-16, 21-23, 27-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshita (US 2005/0112415) in view of Ehara (US 2002/0142195) in further view of Fukui (US 2004/0137314).

As per claims 14,21 and 27, Takeshita et al. in view of Ehara disclose claims 13, 18 and 25 as discussed above, wherein an electrode terminal of the other polarity is provided on the end face in the battery (See Ehara, Fig.1, Item#23 and Par.35 disclose a negative terminal on the end face in the battery); and one end of a safety protection device is connected to the electrode terminal in the end face of the battery case and the other end of the safety protection device is connected to the circuit substrate (See Ehara. Fig.3, item#15 and Par. 41 and 42 disclose a safety protection device (PTC element); one end connected to the external charge/discharge terminals and the other end connected to the circuit substrate through the positive and negative terminals).

But Ehara does not disclose the battery case serves as an electrode terminal of one polarity.

Fukui discloses a battery pack wherein a cathode terminal is disclosed in the center of the center of the surface while the rest of the surface is an anode terminal. (See Fukui, Par.37, also see Lim, 2006/0003192, Par.7).

All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions by modifying the invention as disclosed by Takeshita et al. in view of Ehara to use the

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case itself as an electrode terminal and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention such as reducing production cost.

As per claims 15, 22 and 28, Takeshita et al. in view of Ehara disclose the battery pack according to claims 13, 18 and 25 as discussed above, a first connection bracket having an upright portion is secured to the end face of the battery case (See Takeshita, Fig.2, Items#45, 45a and Par.70 disclose a bracket with an upright portion [45a] wherein the first connection plate [45] is welded to the face of the battery case); a connection plate that makes surface contact with the upright portion of the first connection bracket and that is partly connected to the circuit substrate is arranged on the inner side of one side wall of the end case (See Fig.2, Item#44; disclose a connection plate making surface contact with the upright portion [45a] and as shown on Fig.2 is placed on one sidewall of the end case) and the upright portion and the connection plate are welded together through an aperture formed in one side wall of the end case opposite the upright portion (See Takeshita, Par.70 discloses the upright portion [45a] and the connection plate are welded together, See Ehara, Par.38, discloses the presence of two through holes in the end case for welding).

But does not disclose the battery case serves as an electrode terminal of one polarity and an electrode terminal of the other polarity is provided on the end face in the battery.

Fukui discloses a battery pack wherein a cathode terminal is disclosed in the center of the center of the surface while the rest of the surface is an anode terminal. (See Fukui, Par.37, also see Lim, 2006/0003192, Par.7).

All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions by modifying the invention as disclosed by Takeshita et al. in view of Ehara to use the case itself as an electrode terminal and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention such as reducing production cost.

As per claims 16, 23 and 29, Takeshita et al. in view of Ehara disclose the battery pack according to claims 14, 21 and 27 as discussed above, wherein: second and third connection brackets having upright portions that overlap each other are secured to the other end of the safety protection device and the circuit substrate, respectively; and the upright portions of the second and third connection brackets are welded together through an aperture opened in the end case (See Takeshita et al, Fig.2, Items#33, 47 and Par.23, disclose cell negative pole tab “second connection bracket” connected to the PTC ‘safety protection device ’ and terminal portion “third connection bracket” secured to circuit substrate. Par.71 and Fig.2 further disclose one end of negative pole tab [33] is welded to the terminal portion [47] , See Ehara, Par.38, discloses the presence of two through holes in the end case for welding).

8. **Claims 19 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshita (US 2005/0112415) in view of Ehara (US 2002/0142195) in further view of Iwaizozo et al (US 6,524,739).

As per claim 19 and 20, Takeshita et al. in view of Ehara disclose the battery pack according to claim 18 but does not the end face of the battery at least in a portion thereof to which the tip of the coupling pin is attached is provided with the same type of material as the

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coupling pin or that the end face of the battery in a portion opposite the tip of the coupling pin is provided with the same type of material as the coupling pin.

Iwaizono et al. discloses a secondary battery wherein similar metals are chosen for welding (Col.4 lines 35-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention as disclosed by Takeshita et al. in view of Ehara by matching the material of the coupling pin and the groove in the end face. Doing so would make the welding conditions in resistance welding become easier because both elements would have the same properties (Col.4 lines 35-47).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED OMAR whose telephone number is (571)270-7165.

The examiner can normally be reached on Monday-Thursday 06:30-16:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Akm Enayet Ullah/
Supervisory Patent Examiner, Art Unit 2838

/AHMED OMAR/
Examiner, Art Unit 2838

/A. O./